

Amendments to the Claims

Please amend Claims 1, 4, 7, 12, 15 and 18 to read as follows.

1. (Currently Amended) An inkjet printing method using a printing head having a plurality of nozzles capable of ejecting ink for printing an image by ejecting ink based on printing data which instructs ejection or non-ejection of ink, the plurality of nozzles being aligned next to each other along a predetermined direction, wherein

the printing data corresponding to an abnormal nozzle malfunctioning in ink-ejection is added to the printing data corresponding to a neighboring nozzle of the abnormal nozzle based on a landing state of ink ejected from the neighboring nozzle,

when an N-th nozzle of the plurality of nozzles is an abnormal nozzle, a neighboring printing area neighboring a printing area to be printed by the N-th abnormal nozzle is printed by using an (N-M)-th neighboring nozzle and an (N+M)-th neighboring nozzle (where N and M are positive integers) arranged in the neighborhood of the N-th abnormal nozzle based on the printing data corresponding to the N-th abnormal nozzle,

the printing data corresponding to the N-th abnormal nozzle is alternately added to the printing data corresponding to the (N-M)-th neighboring nozzle and the (N+M)-th neighboring nozzle every time the printing data corresponding to the N-th abnormal nozzle is present,

the landing state is ~~affected by a landing state of ink ejected from the~~  
(N-M)-th neighboring nozzle and the (N+M)-th neighboring nozzle, and is obtained from  
at least one of information about deviation of a landing position of ink on the printing  
medium from a normal landing position and information about a diameter of a dot formed  
by ink landed on the printing medium, and

abnormal nozzles include nozzles incapable of ejecting ink and nozzles  
whose landing state of ink is not normal.

Claims 2 and 3 (Cancelled).

4. (Currently Amended) An inkjet printing method using a printing  
head having a plurality of nozzles capable of ejecting ink for printing an image by ejecting  
ink based on printing data which instructs ejection or non-ejection of ink, the plurality of  
nozzles being aligned next to each other along a predetermined direction, wherein

the printing data corresponding to an abnormal nozzle malfunctioning in  
ink-ejection is added to the printing data corresponding to a neighboring nozzle of the  
abnormal nozzle, based on a landing state of ink ejected from the neighboring nozzle,

when an N-th nozzle of the plurality of nozzles is an abnormal nozzle, a neighboring printing area neighboring a printing area to be printed by the N-th abnormal nozzle is printed by using an (N-M)-th neighboring nozzle and an (N+M)-th neighboring nozzle (where N and M are positive integers) arranged in the neighborhood of the N-th abnormal nozzle based on the printing data corresponding to the N-th abnormal nozzle,

the printing data corresponding to the N-th abnormal nozzle is added to the printing data corresponding to the (N-M)-th neighboring nozzle and the (N+M)-th neighboring nozzle, ~~and~~

a ratio of the printing data corresponding to the N-th abnormal nozzle to be added to the printing data corresponding to the (N-M)-th neighboring nozzle and the (N+M)-th neighboring nozzle is determined based on landing states ~~which are related to the ink-ejection property~~ of the (N-M)-th neighboring nozzle and the (N+M)-th neighboring nozzle, and

the landing state is a landing state of ink ejected from the (N-M)-th neighboring nozzle and the (N+M)-th neighboring nozzle, and obtained from at least one of information about deviation of a landing position of ink on the printing medium from a normal landing position and information about a diameter of a dot formed by ink landed on the printing medium.

5. (Previously Presented) An inkjet printing method as claimed in claim 4, wherein

the states of the neighboring nozzles are obtained from ejection information based on landing results of ink ejected from the neighboring nozzles on a printing medium.

6. (Previously Presented) An inkjet printing method as claimed in claim 5, wherein

the ejection information includes at least one of information about the landing positions of ink on the printing medium and the diameters of dots formed by ink landed on the printing medium.

7. (Currently Amended) An inkjet printing method using a printing head having a plurality of nozzles capable of ejecting ink for printing an image by ejecting ink based on printing data which instructs ejection or non-ejection of ink, the plurality of nozzles being aligned next to each other along a predetermined direction, wherein

the printing data corresponding to an abnormal nozzle malfunctioning in ink-ejection is added to the printing data corresponding to a neighboring nozzle of the abnormal nozzle,

when an N-th nozzle of the plurality of nozzles is an abnormal nozzle, a neighboring printing area neighboring a printing area to be printed by the N-th abnormal nozzle is printed by using an (N-M)-th neighboring nozzle and an (N+M)-th neighboring nozzle (where N and M are positive integers) arranged in the neighborhood of the N-th abnormal nozzle based on the printing data corresponding to the N-th abnormal nozzle, and

when the printing data corresponding to the N-th abnormal nozzle is added to that corresponding to the (N-M)-th neighboring nozzle and the (N+M)-th neighboring nozzle, a printing resolution of the printing head is improved by increasing an ejecting frequency of ink.

8. (Previously Presented) An inkjet printing method as claimed in claim 1, wherein

an image is completely printed in a predetermined area of a printing medium by a single movement of the printing head relative to the printing medium while ink is ejected out of the nozzles of the printing head based on the printing data.

9. (Previously Presented) An inkjet printing method as claimed in claim 1, wherein

an image is completely printed in a predetermined area of a printing medium by a single movement of a single printing head relative to the printing medium while ink is ejected from the nozzles of the single printing head based on the printing data.

10. (Previously Presented) An inkjet printing method as claimed in claim 1, wherein

the manner of adding the printing data corresponding to the abnormal nozzle to that corresponding to the neighboring nozzles is varied depending upon a type of printing medium.

11. (Previously Presented) An inkjet printing method as claimed in claim 1, further comprising the steps of:

printing a detection pattern on a printing medium by using the printing head, the detection pattern being for use in detecting the state of the nozzles; and

detecting the abnormal nozzle based on the detection pattern printed on the printing medium.

12. (Currently Amended) An inkjet printing apparatus for printing an image by use of a printing head having a plurality of nozzles capable of ejecting ink and by ejecting ink out of the nozzles based on printing data which instructs ejection or non-ejection of ink, the plurality of nozzles being aligned next to each other along a predetermined direction, comprising:

compensation means for adding the printing data corresponding to an abnormal nozzle malfunctioning in ink-ejection to the printing data corresponding to a neighboring nozzle arranged in the neighborhood of the abnormal nozzle based on a landing state of ink ejected from the neighboring nozzle,

wherein when an N-th nozzle of the plurality of nozzles is an abnormal nozzle, a neighboring printing area neighboring a printing area to be printed by the N-th abnormal nozzle is printed by using an (N-M)-th neighboring nozzle and an (N+M)-th neighboring nozzle (where N and M are positive integers) arranged in the neighborhood of the N-th abnormal nozzle based on the printing data corresponding to the N-th abnormal nozzle,

the printing data corresponding to the N-th abnormal nozzle is alternately added to the printing data corresponding to the (N-M)-th neighboring nozzle and the (N+M)-th neighboring nozzle every time the printing data corresponding to the N-th abnormal nozzle is present,

the landing state is ~~affected by a landing state of ink ejected from the~~ (N-M)-th neighboring nozzle and the (N+M)-th neighboring nozzle, and is obtained from at least one of information about deviation of a landing position of ink on the printing medium from a normal landing position and information about a diameter of a dot formed by ink landed on the printing medium, and

abnormal nozzles include nozzles incapable of ejecting ink and nozzles whose landing state of ink is not normal.

Claims 13 and 14 (Cancelled).

15. (Currently Amended) An inkjet printing apparatus using a printing head having a plurality of nozzles capable of ejecting ink for printing an image by ejecting ink based on printing data which instructs ejection or non-ejection of ink, the plurality of nozzles being aligned next to each other along a predetermined direction, comprising:

compensation means for adding the printing data corresponding to an abnormal nozzle malfunctioning in ink-ejection to the printing data corresponding to a neighboring nozzle of the abnormal nozzle, based on a landing state of ink ejected from the neighboring nozzle.

wherein when an N-th nozzle of the plurality of nozzles is an abnormal nozzle, a neighboring printing area neighboring a printing area to be printed by the N-th abnormal nozzle is printed by using an (N-M)-th neighboring nozzle and an (N+M)-th neighboring nozzle (where N and M are positive integers) arranged in the neighborhood of the N-th abnormal nozzle based on the printing data corresponding to the N-th abnormal nozzle,

the printing data corresponding to the N-th abnormal nozzle is added to the printing data corresponding to the (N-M)-th neighboring nozzle and the (N+M)-th neighboring nozzle, ~~and~~



said compensation means determines a ratio of the printing data corresponding to the N-th abnormal nozzle to be added to the printing data corresponding to the (N-M)-th neighboring nozzle and the (N+M)-th neighboring nozzle based on the landing states which are related to the ink-ejection property of the (N-M)-th neighboring nozzle and the (N+M)-th neighboring nozzle, and

the landing state is a landing state of ink ejected from the (N-M)-th neighboring nozzle and the (N+M)-th neighboring nozzle, and obtained from at least one of information about deviation of a landing position of ink on the printing medium from a normal landing position and information about a diameter of a dot formed by ink landed on the printing medium.

16. (Previously Presented) An inkjet printing apparatus as claimed in claim 15, wherein

the states of the neighboring nozzles are obtained from ejection information of ink ejected from the neighboring nozzles and landed on a printing medium.

17. (Previously Presented) An inkjet printing apparatus as claimed in claim 16, wherein

the ejection information includes at least one of data about the landing positions of ink on the printing medium and the diameters of dots formed by ink landed on the printing medium.

18. (Currently Amended) An inkjet printing apparatus using a printing head having a plurality of nozzles capable of ejecting ink for printing an image by ejecting ink based on printing data which instructs ejection or non-ejection of ink, the plurality of nozzles being aligned next to each other along a predetermined direction, comprising:

compensation means for adding the printing data corresponding to an abnormal nozzle malfunctioning in ink-ejection to the printing data corresponding to a neighboring nozzle of the abnormal nozzle, wherein when an N-th nozzle of the plurality of nozzles is an abnormal nozzle, a neighboring printing area neighboring a printing area to be printed by the N-th abnormal nozzle is printed by using an (N-M)-th neighboring nozzle and an (N+M)-th neighboring nozzle (where N and M are positive integers) arranged in the neighborhood of the N-th abnormal nozzle based on the printing data corresponding to the N-th abnormal nozzle; and

means for improving a printing resolution of the printing head, when the printing data corresponding to the N-th abnormal nozzle is added to that corresponding to the (N-M)-th neighboring nozzle and the (N+M)-th neighboring nozzle, by increasing an ejecting frequency of ink.

19. (Previously Presented) An inkjet printing apparatus as claimed in claim 12, further comprising:

means for completely printing an image in a predetermined area on a printing medium by a single movement of the printing head relative to the printing medium while ink is ejected from the nozzles of the printing head based on the printing data.

20. (Previously Presented) An inkjet printing apparatus as claimed in claim 12, further comprising:

means for completely printing an image in a predetermined area on a printing medium by a single movement of a single printing head relative to the printing medium while ink is ejected from the nozzles of the single printing head based on the printing data.

21. (Previously Presented) An inkjet printing apparatus as claimed in claim 12, wherein

said compensation means adds the printing data corresponding to the abnormal nozzle to that corresponding to the neighboring nozzles in a different manner depending upon a type of printing medium.

22. (Previously Presented) An inkjet printing apparatus as claimed in claim 12, further comprising:

control means for printing a detection pattern on a printing medium by using the printing head, the detection pattern being for use in detecting the state of the nozzles, and

detection means for detecting the abnormal nozzle based on the detection pattern printed on the printing medium.